



INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
Form PTO-1449 (Modified)
(Use several sheets if necessary)

COMPLETELY KNOWN

Application Number	09/885,451
Confirmation Number	3390
Filing Date	February 20, 2001
First Named Inventor	Thomas L. Ritzdorf
Group Art Unit	1741
Examiner Name	Unknown
Attorney Docket No.	29195-8170US2

2 of 6

U.S. PATENT DOCUMENTS

U.S. Patent or Application			
*6,297,154	Gross et al.	10/02/01	

FOREIGN PATENT DOCUMENTS

Examiner Initial	Cite No	Foreign Patent or Application		Name of Patentee or Applicant of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Figures Appear	T
		Office	NUMBER	Kind Code (if known)			
WL		EP	*0 751 567 A2		Intl. Business Machines Corp.	01/02/97	
WL		EP	*0 881 672 A2		Intl. Business Machines Corp.	12/02/98	
WL		EP	*0 982 771 A1		Lucent Technologies, Inc.	03/01/00	
WL		WO	*98/27585		Intl. Business Machines Corp.	06/25/98	

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published.	T
WL		AHN, E. C. et al. "Adhesion Reliability of Cu-Cr Alloy Films to Polyimide" <i>Materials Research Society Symposium Proceedings</i> , 1996, Vol. 427, pp. 141-145, Materials Research Society.	
WL		ALERS, G. B. et al. "Trade-off between reliability and post-CMP defects during recrystallization anneal for copper damascene interconnects" <i>IEEE International Reliability Physics Symposium</i> , 2001, pp. 350-354.	
WL		GLADKIKH, A. et al. "Activation Energy of Electromigration in Copper Thin Film Conductor Lines" <i>Materials Research Society Symposium Proceedings</i> , 1996, Vol. 427, pp. 121-126, Materials Research Society.	
WL		KONONENKO, O. V. et al. "Electromigration in Submicron Wide Copper Lines" <i>Materials Research Society Symposium Proceedings</i> , 1996, Vol. 427, pp. 127-132, Materials Research Society.	
WL		MEI, Y. et al. "Thermal Stability and Interaction Between SiOF and Cu Film" <i>Materials Research Society Symposium Proceedings</i> , 1996, Vol. 427, pp. 433-439, Materials Research Society.	
WL		RUSSELL, S. W. et al. "The Effect of Copper on the Titanium-Silicon Dioxide Reaction and the Implications for Self-Encapsulating, Self-Adhering Metallization Lines", <i>Materials Research Society Symposium Proceedings</i> , 1992, Vol. 260, pp. 763-768, Materials Research Society, Pittsburgh, PA.	
WL		*NGUYEN et al. "Inter connect and Contact Metallization," Ried, F. H. and Rathore, G.S. Mathan, C. Plougouven and C.C. Schuckert, PV 97-31, The Electrochemical Society, Inc., Pennington, NJ, Sept 97.	

EXAMINER: William Leader DATE CONSIDERED: 9/9/2004

*EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application(s).

OIPE JC108
 NOV 29 2002
 INFORMATION DISCLOSURE
 STATEMENT BY APPLICANT
 Form PTO-1449 (Modified)
 (Use several sheets if necessary)

Sheet 6 of 6

COMPLETE IF KNOWN

Application Number	09/885,451
Confirmation Number	3390
Filing Date	February 20, 2001
First Named Inventor	Thomas L. Ritzdorf
Group Art Unit	1741
Examiner Name	Unknown
Attorney Docket No.	29195-8170US2

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published.

Examiner Initials	Cite No.		T
WJ		*Edelstein, D. et al. "Full Copper Wiring in a Sub-0.25 μ m CMOS ULSI Technology", IEEE, pp. 773-776, 1997.	
WJ		*Ryan, J.G. et al. "Technology Challenges for Advanced Interconnects". (no date)	
WJ		*Lowenheim, Frederick, "Electroplating", pp. 416-425, January 1979.	
WJ		*Patent Abstracts of Japan 04-120290, 21 April 1992.	
WJ		*Ahn, E.C., et. al., "Adhesion Reliability of Cu-Cr Alloy Films To Polyimide," Met. Res. Soc. Symp. Proc. Vol. 427, 1996 Materials Research Society, pp. 141-145	
WJ		*Aiers, G.B. et al., "Trade-off between reliability and post-CMP defects during recrystallization anneal for copper damascene interconnects," IEEE International Reliability Physics Symposium, Orlando, Florida 2001, pp. 350-354	
WJ		*Gladkikh, A. et. al., "Activation Energy of Electromigration in Copper Thin Film Conductor Lines," Met. Res. Soc. Symp. Proc. 1996 Materials Research Society, pp. 121-133	
WJ		*Russell, S.W. et al., "The Effect of Copper on the Titanium-Silicon Dioxide Reaction and the Implications for Self-Encapsulating, Self-Adhering Metallization Lines," Materials Research Society Symposium Vol 260 - Advanced Metallization and Processing for Semiconductor Devices and Circuits - II (May 1992) pp 763-769	
WJ		*Mei, Yu-Jane et al., "Thermal Stability and Interaction Between SiO ₂ and Cu Film," Met. Res. Soc. Symp. Proc. Vol 427, 1996 Materials Research Society, pp. 433-439	

RECEIVED
 DEC 02 2002
 TC 1700

EXAMINER William Leader	DATE CONSIDERED 9/9/2004
-----------------------------------	------------------------------------

*EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application(s).



Approved for use through 07/01/2004. CHS 0057-0001
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/B/PTO		Complete If Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Application Number	09/885,451-Conf. #3390
		Filing Date	June 20, 2001
		First Named Inventor	Thomas L. Ritzdorf
		Art Unit	1742
		Examiner Name	W. T. Leader
Sheet	2	of	3
		Attorney Docket Number	291958170US2

US-5,651,823	01-01-2001	MICHAEL L. PARODI	
US-5,651,865	07-29-1997	Sellers	
US-5,674,787	01-01-2001	BIN ZHAO	
US-5,677,244	01-01-2001	RAMNATH VENKATRAMAN	
US-5,693,563	01-01-2001	SU-PING TEONG	
US-5,705,223	01-08-1998	Bunkofsky	
US-5,707,486	01-01-2001	HARRY A. ATWATER	
US-5,718,813	02-17-1998	Drummond et al.	
US-5,723,028	03-03-1998	Portis	
US-5,747,355	01-01-2001	TOSHIMITSU KONUMA	
US-5,763,953	01-01-2001	TADASHI IJUMA	
US-5,779,799	01-01-2001	SHAWN D. DAVIS	
US-5,801,444	01-01-2001	MOHAMED O. ABDEL FOTOH	
US-5,814,557	01-01-2001	RAMNATH VENKATRAMAN	
US-5,873,992	01-01-2001	JOHN H. GLEZEN	
US-5,937,142	01-01-2001	MEHRDAD M. MOSLEHI	
US-6,015,749	01-01-2001	CHUNG-SHI LIU	
US-6,037,257	01-01-2001	TONY CHIANG	
US-6,072,163	06-06-2000	Armstrong et al.	
US-6,098,712	01-01-2001	THOMAS L. RITZDORF	
US-6,100,195	01-01-2001	LAP CHAN	
US-6,121,141	01-01-2001	CHRISTY MEI-CHU WOO	
US-6,123,825	01-01-2001	CYPRIAN E. UZOH	
US-6,126,989	01-01-2001	KARL ROBINSON	
US-6,136,163	01-01-2001	ROBIN CHEUNG	
US-6,139,697	01-01-2001	LIANG-YUH CHEN	
US-6,184,121	01-01-2001	LEENA P. BUCHWALTER	
US-6,184,137	01-01-2001	PEIJUN DING	

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No.	Foreign Patent Document Country Code* Number* Kind Code* (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
W		EP-0 881 673-A2	12-02-1998	Intl. Business Machines Group	
		JP-63118083	05/1988	Tanaka Electron Ind Co Ltd	
		JP-04131395	05/1992	Toshiba Corp	
		JP-04260993	10/1992	Electroplating Eng of Japan	
		JP-58162823	10/1983	Nippon Denki KK	
		JP-6017291	01/1994	Nec Corp	
W		WO-97/12079	04/1997	Crafts et al.	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP §902. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. *Applicant's unique citation designation number (optional). *See Kind Codes of USPTO Patent Documents at www.uspto.gov or MPEP §901.04. *Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). *For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. *Kind of document by the appropriate symbol(s) as indicated on the document under WIPO Standard ST.18 if possible. *Applicant is to place a check mark here if English language translation is attached.

Examiner Signature	W. Leader	Date Considered	6/7/05
--------------------	-----------	-----------------	--------